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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,231	04/16/2004	Seong Hak Moon	2080-3251	9655

35884 7590 07/13/2007  
LEE, HONG, DEGERMAN, KANG & SCHMADEKA  
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Suite 2300  
LOS ANGELES, CA 90017

EXAMINER
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ABDULSELAM. ABBAS I

ART UNIT	PAPER NUMBER
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2629

MAIL DATE	DELIVERY MODE
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07/13/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<p align="center"><b>Office Action Summary</b></p>	<p><b>Application No.</b></p> <p align="center">10/826,231</p>	<p><b>Applicant(s)</b></p> <p align="center">SEONG HAK MOON</p>	
	<p><b>Examiner</b></p> <p align="center">Abbas I. Abdulsalam</p>	<p><b>Art Unit</b></p> <p align="center">2629</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/06/05</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rumbaugh et al. (USPN 6031336).

Regarding claims 1 and 16, Rumbaugh teaches a spacer discharging apparatus/method of an FED (*col. 3, lines 40-43*), comprising: a discharge path for connecting an anode electrode (122) and a spacer ground electrode of an FED (136, 110) (*col. 3, lines 44-50, col. 4, lines 16-21*),

*While Rumbaugh teaches a switch (129) as shown in Fig. 3,*

Rumbaugh does not specifically teach “a switch unit for selectively connecting the discharge path to discharge electric charge charged in a spacer of the FED”.

*Rumbaugh on the other hand teaches a scanning mode and a discharge mode. During the scanning mode, potentials are sequentially applied to conductive rows 115. By scanning it is meant that a potential*

*suitable for causing electron emission is selectively applied to the scanned row, such that as shown in Fig. 3 both scanning mode and discharge mode configurations are characterized by switch the operation of a switch (129) (col. 4, line 50-62, col. 5, lines 61-67, col. 6, lines 14-22).*

*Note that as electron emission is selectively applied to the scanned row, the path of the emission takes its natural course across the rows.*

*It would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize Rumbaugh's switch shown (129) in Fig. 3 (which is attributed to selective electron emission through scanning) for the purpose of providing simultaneous emission of electron as taught by Rumbaugh.*

Regarding claim 2, Rumbaugh teaches the switch unit is connected in series between the anode electrode and the spacer ground electrode and selectively turned on/off (*col. 5, lines 66-67, col. 6, lines 1-5*).

Regarding claim 3, Rumbaugh teaches the switch unit applies a pulse control signal in synchronization with a vertical synchronous signal to the anode electrode during an interval where a voltage applied to the anode electrode is cut off (*col. 5, lines 61-65, disconnect*

*col. 7, lines 17-31, also see fig. 5).*

Regarding claims 4 and 17, Rumbaugh teaches the switch unit applies a pulse control signal in synchronization with a vertical synchronous signal to the anode electrode during a blanking time period (*col. 7, lines 17-31, also see fig. 5 and Fig. 2, time axis*).

Regarding claim 5, Rumbaugh teaches the blanking time period indicates time during which no image is displayed on a screen of the FED or a pulse duration of the vertical synchronous signal (V sync) (*col. 7, lines 17-31, also see fig. 5, col. 6, lines 14-18*)

Regarding claims 6-7 and 18, Rumbaugh teaches the pulse control signal is repeatedly applied at certain period intervals on the basis of the vertical synchronous signal (*col. 6, lines 66-67, col. 7, lines 1-16, see fig. 5*).

Regarding claim 8, Rumbaugh teaches the switch unit comprises: a switch for selectively connecting the anode electrode and the spacer ground electrode (*Fig. 4 (129, 175), col. 6, lines 30-32*); a buffer and inverter signal unit for outputting a control signal to control the switch (*col. 6, lines 51-53, Fig. 4 (130)*); and a transistor for outputting a driving current to drive the switch upon receiving a control signal from the buffer and inverter signal unit (*col. 6, lines 54-65*)).

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Regarding claim 9, Rumbaugh teaches the switch is one of a high voltage relay, a high voltage switch and thyrister (*col. 6, lines 1-5*).

Regarding claim 10, Rumbaugh teaches the switch is turned on when a current flows to the transistor, and turned off when no current flows to the transistor (*col. 6, lines 14-22*).

Regarding claims 11-12, and 19, Rumbaugh teaches a protection resistor (*Fig. 4 (167)*) connected between the anode electrode (*124*) and a high voltage power source unit (*126*) applying a high voltage to the anode electrode (*see fig. 4 (124, 126, 167), col. 5, lines 61-65*).

Regarding claims 13-15 and 20, Rumbaugh teaches a discharge-controlling resistor for controlling discharge time and a residual voltage (*col. 5, lines 40-52, Fig. 2*).

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following arts are cited for further reference.

U.S. Pat. No. 6,815,902 to Perrin et al.

U.S. Pat. No. 6,822,287 to Park

U.S. Pat. No. 6,888,519 to Yamano et al.

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abbas I. Abdulsalam whose telephone number is 571-272-7685. The examiner can normally be reached on Monday through Friday from 9:00A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abbas I Abdulsalam  
Examiner  
Art Unit 2629  
June 28, 2007

